

REMARKS

Applicants' attorney thanks the Examiner for the careful consideration given to this case. The matters raised in the Office action are discussed below in the same order as presented by the Examiner.

The prior election of the invention of Group I is confirmed without traverse. The nonelected claims have been cancelled from this application, and they will be presented in a divisional application.

For convenience of amendment, the pending claims have been cancelled in favor of newly presented claims 10-13. Independent claims 10 and 12 are directed to the elected subject matter of Group I. More particularly, claims 10 and 12 are specific to nonwovens having unique combinations of properties in accordance with the invention including specific values for the ratio of machine direction to cross strength grab tensile strength, density, tensile strength index and weight range. For the Examiner's convenience, it is noted that the numerical limitations are supported in the specification and were embodied in original claims 1 and 3.

Dependent claims 11 and 13 are also directed to the invention of Group I and emphasize the increased concentration of filaments in the cross direction in

accordance with the claimed invention. This limitation is supported throughout the application and contained in the illustrated embodiments.

The rejection of the claims 1-3, 8 and 9 under 35 USC 112, second paragraph, is moot in view of newly presented claims 10 - 13.

It is requested that the Examiner reconsider and withdraw the rejection of the claims under 35 USC 102(e) as being anticipated by and/or rendered obvious by Ferencz et al. In the rejection of the claims, Fig. 11 of Ferencz et al. is deemed to teach a grab tensile strength ratio of 1.5 and the grab tensile strengths of less than 1.5 newtons per 50 mm per gram of nonwoven per meter² are presumed to be inherent based on the use of like materials. With regard to the latter, the burden is deemed to be shifted to applicants to prove otherwise.

Amended claims 10 and 11 respectively recite grab ratios of less than 1.3 and less than 1.1 so as to overcome the reference to Fig. 11 of Ferencz et al. On the other hand, Fig. 12 (comprising Table 1 in Ferencz et al.) discloses grab ratios that all exceed the amended claim limitations. Referring to Fig. 12, the following values are reported and the following grab ratios are calculated.

<u>ID</u>	<u>CD</u>	<u>MD</u>	<u>RESULTING RATIO</u>
105	29	50	1.72
103	81	116	1.43
Y	24	47	1.95
Z	32	51	1.59

Consequently, Ferencz et al. fail to disclose a grab ratio as set forth in the amended claims.

The Ferencz et al. patent teaches forming nonwovens using successive low and high pressure hydroentanglement processing. The patentee teaches such processing enables "hydroentangling the fibers wherein the filaments are interengaged by continuous complex loops or spirals, with the filaments being substantially free of any wrapping, knotting or severe bending." (Column 2, lines 62-65.) To that end, the patentee further teaches processing of "unbonded" webs. Accordingly, Ferencz et al. exclude compaction, calendaring and like type processing giving rise to fusion of filaments and/or severe bending of filaments.

In contrast with the successive hydroentangling treatments of unbonded webs in Ferencz et al., the claimed nonwoven is formed by a process including an initial web compaction step, an optional hot calendaring step, and thereafter a hydroentangling step. The pre-hydroentangling steps of the inventive nonwoven result in the very

structural features avoided by Ferencz et al., namely, prior interengagement or pre-bonding of the filaments including compaction, bending and optionally fusion. The inventive nonwoven is therefore structurally different from that in Ferencz et al.

In view of the foregoing structural differences, and particularly in light of the patentee's explicit rejection of the structural features of the claimed nonwoven, there is no basis to assume that the claimed grab tensile values would be inherent in the Ferencz et al. nonwoven or to shift the burden to applicants to prove otherwise. Section 2112, V, provides:

Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the Examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference.

Clearly, the Ferencz et al. nonwoven is not, and does not appear to be, "substantially identical" to the claimed nonwoven. Ferencz et al. specifically reject the very differences present in the structure of the claimed nonwoven. These structural differences include pre-bonding via compaction and severe bending of filaments during such

compaction as well as optional hot calendaring with fusion bonding or the like of contacting filaments.

Even assuming for purposes of argument that the burden has shifted to applicants, the accompanying declaration by Olivier Guichon fully overcomes the presumption by showing an unobvious difference as stated in the MPEP. That is, the declaration compares the claimed nonwoven with a nonwoven that is substantially closer in structure to it than are any of the nonwovens disclosed in Ferencz et al. and shows the unexpected achievement of improved isotropy in the inventive nonwoven through filament concentration in the cross direction. (Ferencz et al. do not teach or suggest increased filament concentration in the cross direction.)

The nonwovens compared in the Guichon declaration are identical, but for the increased number of filaments in the cross direction in the inventive nonwoven. The increased number of filaments in the cross direction for a given basis weight, as compared with conventional nonwovens, has been found by applicants to provide improved isotropy.

The foregoing improvements are shown in the attached Guichon declaration. The declaration compares spun bonded nonwovens which are identical except for the number of fibers deposited in the cross direction.

In Test 1, the die is disposed at an inclination angle of 0° relative to the nonwoven cross direction in a conventional manner. In the example, the die construction is such that the number of filaments deposited on the conveyor/1 meter of web width is 5000.

In Test 2, the die is disposed at a 45° angle relative to the nonwoven cross direction in accordance with the invention. As a result, the number of filaments deposited on the conveyor /1 meter of web width is $5000/\cos 45^\circ$ or 7072.

As shown by the test results reported in the Table of the Guichon declaration, the nonwoven of Test 2 has a significantly increased strength in the cross direction and an MD/CD ratio of 1.23 in accordance with its improved isotropic properties. The nonwoven of Test 1 has an MD/CD ratio of 3.88 and therefore does not possess a comparable degree of isotropy.

The nonwoven of Test 2 is further distinguished by an increased thickness and a lower density as compared with the nonwoven of Test 1. The nonwoven of Test 2 also has more uniform MD and CD index values.

The Guichon declaration shows that an otherwise identical nonwoven not having the increased cross direction density of filaments does not achieve properties of the

claimed nonwoven. This is an unexpected and unobvious result that overcomes the Ferencz et al. teaching. Moreover, the compared nonwoven is far closer to the claimed nonwoven than any nonwoven taught or suggested by Ferencz et al., and the declaration tests thereby show that Ferencz et al. does not inherently possess the properties of the claimed nonwoven.

Lastly, it should be appreciated that the Photos 1 and 2 of the nonwovens in the Guichon also show the increased uniformity of the claimed nonwoven. Specifically, the Photo 1 shows the nonwoven of Test 1 to have a greater occurrence of the holes (light colored areas) than the nonwoven of Test 2 shown in Photo 2. Generally, the improved uniformity is associated with the filaments being intertwined to a higher degree (application page 3, line 6+), which in turn, enables a higher level of water jet entanglement.

For all of the foregoing reasons, claims 10-13 presently of record are in condition for allowance and such action is requested.

If there are any further fees required by this communication, please charge the same to Deposit Account No. 16-0820, Order No. 38033.

Respectfully submitted,

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